16. Ingest

This section describes the procedures the Data Ingest Technician (DIT) can use when performing and monitoring ingest of science data. The data ingest process is largely automated, however, the DIT will be required to support hard media operations, resolve problems, periodically monitor ingest operations, and coordinate with the appropriate internal and external entities to resolve resource conflicts. Section 16.1 describes the Ingest subsystem custom software items. Section 16.2 describes how to use the ECS GUI Ingest tool. Section 16.3 describes how to use the HTML Interactive Ingest tool. Section 16.4 describes the Ingest Polling process. Section 16.5 describes the process of recovering from Data Ingest Failures. Section 16.6 describes the Document Ingest process. Section 16.7 describes how to use the ECS Science Data Server Operator tool.

16.1 Ingest Custom Software Items

The Ingest custom software items supports the ingest of data into ECS repositories on a routine and ad hoc basis. The software supports a variety of data formats and structures. Ingest data processing and storage functions vary according to attributes of the ingested data such as data type, data format, and the level to which the ingested data has been processed.

The Ingest subsystem is capable of accepting data from a variety of sources including both electronic network interfaces and physical media. Data received is predefined within ECS with regard to expected metadata and metadata characteristics, data types, files, and formats, and means of delivery to ECS in accordance with approved ICDs with external organizations. The following list defines the ECS Ingest Subsystem custom software items:

1. EcInAuto - is the Automated Network Ingest Interface process that provides basic capability to ingest data electronically from an external source.

2. EcInPolling - is the Polling Ingest Client Interface process that creates polling request, detects new files in a specified external location, creates and submits ingest request.

3. EcInInter - is the Interactive Ingest Interface process that provides science users and ECS operators the capability for interactive request to ingest data available on the network.

4. EcInReqMgr - is the Ingest Request Manager process that manages ingest request traffic and processing.

5. EcInGran - is the Ingest Granule Server process that provides services for required preprocessing of data and subsequent insertion into the FSMS.

6. EcInGUI - is Ingest GUI Interface process that provides operators ability to perform ingest from physical media, monitor the status of on-going ingest requests, and modify Ingest configuration parameters.

7. Ingest Database - is a Sybase database that stores and provides access to Ingest Subsystem internal data.

16.2 ECS Ingest Tool

The **ECS Ingest** tool has five tab widgets; **Ingest Intro, History Log, Monitor/Control, Operator Tools,** and **Media Ingest.** The **Ingest Intro** screen can be used as a menu path to **Save** or **Print** screens, and **Exit** the Ingest tool. The **History Log** (Section 16.2.2 & Section 16.2.3) is a view only screen which allows the DIT the capability to view ingest activities that have already completed, and to create reports. The **Monitor/Control** (Section 16.2.4) screen provides the DIT the capability to view and update ongoing ingest activities in the system. The **Operator Tools** (Section 16.2.5) are used by the DIT to view and set ingest thresholds. The **Media Ingest** (Section 16.2.6) screen gives the DIT the capabilities to perform media ingest.

The Activity Checklist table that follows provides an overview of the Ingest tool and its functions. Column one (**Order**) shows the order in which tasks should be accomplished. Column two (**Role**) list the Role/Manager/Operator responsible for performing the task. Column three (**Task**) provides a brief explanation of the task. Column four (**Section**) provides the Procedure (**P**) section number or Instruction (**I**) section number where details for performing the task can be found.

Table 16.2-1. ECS Ingest Tool - Activity Checklist

Order	Role	Task	Section
1	DIT	Starting the Ingest GUI	(P)16.2.1
2	DIT	Viewing the Ingest History Log	(P)16.2.2
3	DIT	Ingest History Log Reports	(P)16.2.3
4	DIT	Monitoring/Controlling Ingest Requests	(P)16.2.4
5	DIT	Suspending Ingest Requests	(P)16.2.5
6	DIT	Resuming Ingest Requests	(P)16.2.6
5	DIT	Ingest Operator Tools	(P)16.2.7
6	DIT	Physical Media Ingest	(P)16.2.8

16.2.1 Starting the Ingest GUI

Starting the Ingest GUI in normally operations will be just a matter of clicking an icon that appears on your desktop. Because the desktop configurations have not been installed to date it will be necessary to follow the interim procedure described below. Starting the Ingest GUI assumes that the applicable servers are running and the DIT has logged in. If you are already familiar with the procedure, you may prefer to use the quick-step table at the end of the procedure. If you are new to the system, you should use the following detailed procedures:

1   Type **xhost** + at the command shell prompt and then press **Return**.

2   Bring up the Ingest GUI server. If the Ingest GUI has not already been brought up. From a SUN workstation or NCD X-Term terminal telnet into the Ingest Server. Enter **telnet \<hostname\>**. Example **telnet g0dis01.**

3   Log into the Ingest Operator workstation using your user identifier and password by typing *YourUserID*, and then press **Return**.
  - A password prompt is displayed.

4   Enter *YourPassword*, then press **Return**.
  - You are authenticated as yourself.

5   Set your terminal display environment using the following command:
setenv DISPLAY \<hostname:0.0\>

6   Create an xterm window for the Ingest GUI Ingest the following command:
xterm -n GUI_\<mode\> -sl 5000-sb &

7   Change directory to the directory containing the Ingest GUI command file:
cd /usr/ecs/\<mode\>/CUSTOM/utilities

8   Start the Ingest GUI using the following command:
EcInGuiStart \<mode\>
  - The **ECS Ingest** tool is opened.
  - The **Ingest Intro** screen is displayed.

Table 16.2-2. Starting Ingest Operator GUI - Quick-Steps

Step	What to Enter or Select	Action to Take
1	xhost +	press Return
2	telnet <hostname>	press Return
3	YourUserID	press Return
4	YourPassword	press Return
5	setenv DISPLAY <hostname:0.0>	press Return
6	xterm -n GUI_<mode> -sl 5000-sb &	press Return
7	cd /usr/ecs/<mode>/CUSTOM/utilities	press Return
8	EcInGuiStart <mode>	press Return

16.2.2 Viewing the Ingest History Log

The DIT can determine if an Ingest request has been completed by viewing the entries in the **ECS Ingest History Log.** An Ingest request is not logged into the **History Log** until the Ingest process has been completed. There are four different search criteria that can be used to view **Ingest History Log** entries, the **Start** and **Stop Date/Time,** the **Data Provider ID,** the **Data Type,** and **Final Request Status**. The DIT must manually enter the **Start and Stop Date/Time**

criteria, which displays all Ingest entries that were logged between the start date and time, and the stop date and time. The **Data Provider, Data Type, and Final Request Status** each have a drop down option menu in which to select the criteria. After the DIT enters the search criteria, he/she clicks on the **Display** button to display the log of completed Ingest entries that match the search criteria. The **History Log** displays the following:

Request ID Data Provider, Status, Ingest Type, Start Date, Start Time, End Date, End Time, Total Number of Granules, #Success Granules, Data Vol (MB), File Count, Time to Xfer (min.), Time Preproc (min.), Time to Archive (min.), and Priority Restart Flag.

The DIT can display the same information on the granule level by clicking on the desired entry.

The procedure that follows explains how to view Ingest Log entries using the **History Log.** This example will use the **Start** and **Stop date/time** filters to display a list of Ingest requests that were logged in the last twenty-four hour period. If you are already familiar with the procedure, you may prefer to use the quick-step table at the end of the procedure. If you are new to the system, you should use the following detailed procedures:

1   Click on the **ECS Ingest** icon. This assumes that the Ingest GUI is running, if the GUI is not up, then follow the steps for bringing up the Ingest GUI outlined in section 16.2.1.
- The **ECS Ingest** tool is opened.
- The **Ingest Intro** screen is displayed.

2   Click the **History Log** tab widget.
- The History Log screen is displayed.

3   Click on the Start Date/Time field.
- The cursor moves to the **month** field.

4   Enter the **month**, then press **Tab.**
- The cursor moves to the **day** field.

5   Enter the **day** of the month, then press **Tab.**
- The cursor moves to the **year** field.

6   Enter the **year**, then press **Tab.**
- The cursor moves to the **hour** field.

7   Enter the **hour**, then press **Tab.**
- The cursor moves to the **min** field.

8   Enter the **minute,** then press **Tab.**
- The cursor moves to the **sec** field.

9   Enter the **seconds,** then press **Tab** or, bypass the **second's** field by pressing tab first.

- The cursor moves to the **month** field for Stop Date/Time.

10   Repeat steps 4 through 9 for the **Stop** Date/Time field.

11   Select either **Detailed Report** or **Summary Report**.
- Summary Report requires the operator to select either **Request Level** or **Granule level**.

12   Click on the **Display** button.
- Each ingest request that was completed and logged between the start and end time and date are displayed.
- Each entry displays the **Request ID, # of Success Granules, External Data Provider, Ingest Type, Processing Start and End Time, Data Volume, Number of Data Sets,** and **Number of Data Files.**

13   Click on an individual **Entry**.
- The granule level of the selected entry is displayed.

14   Select another function by clicking on a GUI tab.

15   To exit the ECS Ingest tool, select menu path **File/Exit**.

Table 16.2-3. View Ingest History Log - Quick-Steps

Step	What to Enter or Select	Action to take
1	**ECS Ingest** icon	**single Click**
2	**History Log**	**press Return**
3	**Month** (Start Month field)	**single Click**
4	Enter the **Month**	**press Tab**
5	Enter the **Day**	**press Tab**
6	Enter the **Year**	**press Tab**
7	Enter the **Hour**	**press Tab**
8	Enter the **Minute**	**press Tab**
9	Enter the **Seconds**	**press Tab**
10	Enter the **Month**	**press Tab**
11	Enter the **Day**	**press Tab**
12	Enter the **Year**	**press Tab**
13	Enter the **Hour**	**press Tab**
14	Enter the **Minute**	**press Tab**
15	Enter the **Seconds**	**press Tab**
16	Select Detailed Report or Summary Report	**single Click**
17	**Display** button	**single Click**
18	Individual **Entry** record	**single Click**

19	Select another function	**single Click or,**
20	**File/Exit**	**single Click and drag**

16.2.3 Ingest History Log Reports

The **History Log** can support four report formats, a request history log report, a data type history report, a request summary statistics report, and a data type summary statistics report. The reports can be generated for specified time periods and executed on a regular basis. There are two radio buttons above the display box, **Detailed Report** and **Summary Report.** Each report supplies the DIT and operations staff with a view of the ingest request completion performance. The **Detailed Report** gives detailed information about each completed ingest request. The **Summary Report** gives a summary, which includes the average and maximum time taken to perform each step in the ingest process.

The **Detailed Report** can be sorted by **Start** and **Stop Date & Time,** by **Data Provider,** and by **Data Type.** The default for the **Detailed Report** is DAAC and Start Time. The **Summary Report** should be sorted by **DAAC, Data Provider or Data Types.**

The following procedure will order a **Detailed Report** with the **Data Provider** as the sort criteria, then will clear the screen and order a **Summary Report** using the **Data Type** as the sort criteria. If you are already familiar with the procedure, you may prefer to use the quick-step table at the end of the procedure. If you are new to the system, you should use the following detailed procedures:

1 Click on the **ECS Ingest** icon. This assumes that the Ingest GUI is running, if the GUI is not up, then follow the steps for bringing up the Ingest GUI outlined in section 16.2.1.
- The **ECS Ingest** tool is opened.
- The **Ingest intro** screen is displayed.

2 Click on the **History Log** tab widget.
- The **History Log** screen is displayed.

3 **Click** on the **Data Provider** field.
- Cursor moves to the **Data Provider** field.

4 Enter the **Data Provider**, then press **Tab** or, a drop down option menu may also be used as follows:
- a) Point the mouse on the arrow to the right of the **Data Provider** field.
- b) While holding down on the mouse, **highlight** the required **Data Provider.**
- c) **Release** the mouse button.
- d) The **Data Provider** that was chosen is now displayed in the **Data Provider** field.

5 Click on the **Detailed Report** Radio box.

6   Click on the **Display** button.
- The **Detailed Report** is now displayed.
- The **Detailed Report** displays the following information; **Request ID, Data Provider, Start and End Time, Completion Status, Restart Flag, Processing Time** (minutes),**Transfer Time** (minutes), **Archive Time** (minutes), **Number of Files, Number of Granules, Number of Success Granules, Data volume** (MB), and **Ingest Type.**

7   Click on the **Clear All** button.
- The display box and criteria fields are cleared.

8   Click on the **Data Type** field.
- The cursor moves to the **Data Type** field.

9   Enter the **Data Type**, then press **Tab** or, a drop down option menu may also be used as shown below:
a) Point the mouse on the arrow to the right of the **Data Type** field.
b) While holding down on the mouse, **highlight** the required **Data Type.**
c) **Release** the mouse button. The **Data Type** that was chosen is now displayed in the **Data Type** field.

10   Click on the **Summary Report** radio box.

11   Click on the **Display** button.
- The **Summary Report** is displayed.
- The **Summary Report** displays the following information; **Data Provider, Data Type, Total Requests, Total Errors, Granules** (Avg/Max), **Files** (Avg/Max), **Size -MB** (Avg/Max), **Transfer Time- minutes** (Avg/Max), **Pre-Processing Time-minutes** (Avg/Max), and **Archive Time-minutes** (Avg/Max).

12   Print the report by following menu path **File / Print.**

13   Select another function by clicking on a widget tab.

14   To exit the **ECS Ingest** tool, select menu path **File / Exit**.

Table 16.2-4. Ingest History Log Reports - Quick-Steps

Step	What to Enter or Select	Action to Take
1	**ECS Ingest** icon	**single Click**
2	**History Log**	**press Return**
3	**Data Provider** field	**single Click**
4	Enter the **Data Provider**	**press Tab**

5	**Detailed Report** Radio Box	**single Click**
6	**Display** button	**single Click**
7	**Clear All** button	**single Click**
8	**Data Type** field	**single Click**
9	Enter **Data Type**	**press Tab**
10	**Summary Report** Radio Box	**single Click**
11	**Display** button	**single Click**
12	**File / Print**	**single Click and drag**
13	Select another function	**single Click or,**
14	**File/Exit**	**single Click and drag**

16.2.4 Monitoring/Controlling Ingest Requests

The DIT can monitor and control ingest activities using the **Ingest Monitor/Control** tool. The DIT can view all or selective ingest requests in the system. A search can be filtered by using a sort criteria of **Request ID, Data Provider,** or **All Requests.** After the search criteria has been selected, the DIT has the option of displaying a **Graphical View** or a **Text View** of the ingest requests. The **Graphical View** displays the Request Id, the Time processing began, and the Percent of the ingest process that has been completed. The **Text View** displays the Request Id, State of Request, External Data Provider, Ingest Type, Request Priority, Start Date & Time, Expiration Date, Total Granules, and Completion Time.

The DIT has the capability of updating ongoing ingest activities in the system. The DIT can Suspend, Resume, Cancel, and change the Priority of a request. To display a request on a granule level, the DIT will double click on the request.

The following procedure will display all requests currently in the system, select and view a request on the granule level, then cancel the request. If you are already familiar with the procedures, you may prefer to use the quick-step tables at the end of this procedure. If you are new to the system, or have not performed this task recently, you should use the detailed procedures that follow.

1 Click on the **ECS Ingest** icon. This assumes that the Ingest GUI is running, if the GUI is not up, then follow the steps for bringing up the Ingest GUI outlined in section 16.2.1.
- The **ECS Ingest** tool is now open.
- The **Ingest Intro** screen is displayed.

2 Click on the **Monitor/Control** tab widget.
- The **Monitor/Control** screen is displayed.

3 Click on the **All Requests** button, in the radio box.

4 Click on the **Text View** button.
- All ongoing ingest requests are displayed.

5   Highlight individual account, then **double Click**
- Text is displayed at the granule level.

6   Highlight the request that needs to be canceled, then **single Click.**

7   Click on the **Cancel** button, from the toggle control box.

8   Click on the **OK** push button.
- Activates the toggle push buttons.
- A confirmation dialog box pops up.

9   Click the **OK** button in the confirmation dialog box.
- Ingest request has been canceled.

10   Select another function by clicking on a widget tab.

11   To exit the **ECS Ingest** tool, select menu path **File / Exit**.

Table 16.2-5. Monitoring/Controlling Ingest Requests - Quick-Steps

Step	What to Enter or Select	Action to Take
1	**ECS Ingest** icon	**single Click**
2	**Monitor/Control** tab widget	**single Click**
3	**All Requests** button	**single Click**
4	**Text View** button	**single Click**
5	**Highlight** individual account	**double Click**
6	**Highlight** account to cancel	**single Click**
7	**Cancel** button	**single Click**
8	**OK** push button	**single Click**
9	**OK** button in confirmation box	**single Click**
10	Select another function	**single Click or**
11	**File** / **Exit**	**single Click and drag**

16.2.5 Suspending Ingest Requests

Under certain circumstances it may be advisable to suspend the processing of an ingest request and resume it at a later time. For example, if there is a very large request that is taking up resources and causing other requests to back up waiting, the processing of that request should be suspended until a time when there is less demand on Ingest. If you are already familiar with the procedure to suspend an ingest request, you may prefer to use the quick-step table at the end of the procedure. If you are new to the system, you should use the following detailed procedures. The procedure starts with the assumption that all applicable servers and the **ECS Ingest** GUI are currently running and the ingest request to be canceled is being displayed on the **Monitor/Control** tab.

1   Click on the row corresponding to the request to be suspended on the **Monitor/Control** tab to highlight the request, then click on the **Suspend** button.

2   Click on the **OK** button at the bottom of the GUI.
   - Processing of the selected ingest request stops.
   - Status of the request, as displayed in the **Status** column of the **Request Information** list (if using **Text View**), changes from its original value to "Suspended."

1   If there are no suspended requests to be resumed at this time, return to the procedure for **Monitoring/Controlling Ingest Requests**.

Table 16.2-6. Suspending Ingest Requests - Quick-Steps

Step	What to Enter or Select	Action to Take
1	Highlight the request to be suspended	Single Click
2	**Suspend** button	Single Click

3	**OK** button	Single Click

16.2.6 Resuming Ingest Requests

After the matter that caused an ingest request to be suspended from processing has been taken care of, the processing can be resumed. If you are already familiar with the procedure to resume an ingest request, you may prefer to use the quick-step table at the end of the procedure. If you are new to the system, you should use the following detailed procedures. The procedure starts with the assumption that all applicable servers and the **ECS Ingest** GUI are currently running and the ingest request to be canceled is being displayed on the **Monitor/Control** tab.

1   Click on the row corresponding to the request to be resumed on the **Monitor/Control** tab, then click on the **Resume** button.

2   Click on the **OK** button at the bottom of the GUI.
- The selected ingest request resumes processing.
- Status of the request, as displayed in the **Status** column of the **Request Information** list (if using **Text View**), changes from "Suspended" to whatever state is appropriate for the continuation of request processing (depending on its status when it was suspended).

3   Return to the procedure for **Monitoring/Controlling Ingest Requests**.

Table 16.2-7. Resuming Ingest Requests - Quick-Steps

Step	What to Enter or Select	Action to Take
1	Highlight the request to be resumed	Single Click
2	**Resume** button	Single Click
3	**OK** button	Single Click

16.2.7 Ingest Operator Tools

The **Ingest Operator Tools** give the Production Monitor (PM) and/or DIT the capability to set and view ingest thresholds. The ingest thresholds are broken up into two groups: System-wide and Data Provider specific. To edit the Data Provider click on the **Modify External Data Provider/User Information** button in the Radio box just below the tab widgets (Section 16.2.7.1). To make System-Wide edits click on the **Modify System Parameters** (Section 16.2.7.2). When a DIT reviews the previous day's Ingest activity, he/she may discover that there is a backlog of requests for ingest. After reviewing the report he/she may invoke the **Ingest Operator Tool**, then increase the System or Data Provider volume threshold to support a catch-up mode. Another tool, **File Transfer** (Section 16.2.7.3), allows the DIT to transfer requested files to optional remote sites.

The Activity Checklist table that follows provides an overview of the Ingest Operator tool. Column one (Order) shows the order in which tasks should be accomplished. Column two (Role) list the Role/Manager/Operator responsible for performing the task. Column three (Task) provides a brief explanation of the task. Column four (Section) provides the Procedure (P) section number or Instruction (I) section number where details for performing the task can be found.

Table 16.2-8. Ingest Operator Tools - Activity Checklist

Order	Role	Task	Section
1	PM/DIT	Modify External Data Provider/User Information	(P) 16.2.7.1
2	PM/DIT	Modify System Parameters	(P) 16.2.7.2
3	DIT	File Transfer	(P) 16.2.7.3

16.2.7.1   Modify External Data Provider/Interactive User Information

The PM or DIT can edit the FTP User Name, FTP Password, Email Address, HTML Password, CDS Entry Name, Server Destination UUID, Volume Threshold, Request Threshold, and Priority Level when the **Modify External Data Provider/Interactive User Information** toggle button is selected.

The **Volume Threshold** is the maximum data volume allowed to be ingested concurrently by the data provider in one day. The **Request Threshold** is the maximum number of requests allowed to be processed by the data provider in one day. One day is a 24 hour period beginning when the first request is received. Each Data Provider is given a data **Priority Level**, which can effect when the ingest data is processed. When the Data Providers thresholds have been reached, the system will no longer process ingest requests for that specific Data Provider until the following day. If the DIT determine that this specific Data Provider's data needs to be processed, he/she can change the thresholds to allow the system to accept the request.

The procedure that follows explains how to edit the Data Provider's **Email Address**, **Volume Threshold, Request Threshold** and **Priority Level**. If you are already familiar with the procedures, you may prefer to use the quick-step table at the end of this procedure. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure.

1   Click on the **ECS Ingest** icon. This assumes that the Ingest GUI is running, if the GUI is not up, then follow the steps for bringing up the Ingest GUI outlined in section 16.2.1.
- The **ECS Ingest** tool is opened.
- The **Ingest Info** screen is displayed.

2   Click on the **Operator Tools** tab widget.
- The **Operator Tool** is opened.

3   Click on the **Modify External Data Provider/User Information** toggle tab.
- The Data Provider screen is displayed.

4   Click on the **Data Provider** field.
- Cursor moves to the **Data Provider** field.

5   Enter the **Data Provider** name, then press **Tab** or, a drop down option menu may also be used as follows:
- a)   Point the mouse on the arrow to the right of the **Data Provider** field.
- b)   While holding down the mouse, **highlight** the chosen **Data Provider.**
- c)   **Release** the mouse button. The **Data Provider** that was chosen is now displayed in the **Data Provider** field.

6   Click on the **Email Address** field.
- Cursor moves to the **Email Address** field.

7   Enter the **Email Address**, then press **Tab.**
- Cursor moves to the new **Volume Threshold** field.

8   Enter the **New Volume Threshold**, then press **Tab.**
- Cursor moves to the new **Request Threshold** field.

9   Enter the **New Request Threshold**, then press **Tab.**
- Cursor moves the new **Priority Level** field.

10   Enter the new **Priority Level**, then press **Tab** or, a drop down option menu may also be used as follows:
- a)   Point the mouse on the arrow to the right of the **New Priority Level** field.
- b)   While holding down the mouse, **highlight** the chosen **Priority Level.**
- c)   **Release** the mouse button. The **Priority Level** that was chosen is now displayed in the **Priority Level** field.

11   Click on the **OK** push button.
- Invokes changes to the system.

12   Select another function by clicking on a widget tab.

13   To exit the **ECS Ingest** tool, select menu path **File / Exit**.

Table 16.2-9. Modify External Data Provider/ Interactive User Information - Quick-Steps

Step	What to Enter or Select	Action to Take
1	**ECS Ingest** icon	**Single Click**
2	**Operator Tools** Tab widget	**Single Click**
3	**Modify External Data Provider/Interactive User Information** toggle tab	**Single Click**
4	**Data Provider** field	**Single Click**
5	Enter the **Data Provider** Name	**Press Tab**
6	**Email Address** field	**Single Click**
7	Enter the **Email Address**	**Press Tab**
8	Enter the **New Volume Threshold**	**Press Tab**
9	Enter the **New Request Threshold**	**Press Tab**
10	Enter the **New Priority Level**	**Press Tab**
11	**OK** push button	**Single Click**
12	Select another function/widget	**Single Click**
13	**File** / **Exit**	**Single Click and drag**

16.2.7.2   Modify System Parameters

The **Modify System Parameters** tool allows the PM or DIT to edit the System Volume Threshold, to set the maximum number of ingest requests allowed to be processed concurrently, the maximum data volume to be ingested concurrently, the number of transfer retry attempts to make when network failure occurs, and the Polling timer indicating how long to wait before starting the Ingest Polling.

In the following procedure the DIT will invoke the **ECS Ingest** tool then select the **Operator Tools** tab widget. From the **Operator Tools** display screen the DIT will click on the **Modify System Parameters** toggle button, then edit the **Volume Threshold, Request Threshold, Communication Retry Count, Communication Retry Interval, Monitor Time, and Screen Update Time** fields. If you are already familiar with the procedure, you may prefer to use the quick-step table at the end of the procedure. If you are new to the system, or have not performed this task recently you should use the following detailed procedure.

1   Click on the **ECS Ingest** icon. This assumes that the Ingest GUI is running, if the GUI is not up, then follow the steps for bringing up the Ingest GUI outlined in section 16.2.1.
- The **ECS Ingest** tool is opened.
- The **Ingest Intro** screen is displayed.

2   Click on the **Operator Tools** tab widget.
- The **Operator Tool** is opened.

3   Click on the **Modify System Parameters** toggle tab.

- The **System Parameters** screen is displayed.

4   Click on the **New Volume Threshold** field.
- The cursor moves to the **New Volume Threshold** field.

5   Enter the **New Volume Threshold**, then press **Tab.**
- The Maximum data volume to be ingested concurrently is changed.
- The cursor moves to the **New Request Threshold** field.

6   Enter the **New Request Threshold**, then press **Tab.**
- The Maximum number of ingest requests to be processed concurrently is changed.
- The cursor moves to the **New Communication Retry Count** field.

7   Enter the **New Communication Retry Count**, then press **Tab.**
- The number of retries to perform when a communication failure is encountered with the external data provider is changed.
- The cursor moves to the **New Communication Retry Interval** field.

8   Enter the **New Communication Retry Interval**, then press **Tab.**
- The number of minutes to wait between retries when attempting to communicate with the External Data Provider.
- The cursor moves to the **Monitor Time** field.

9   Enter the **New Monitor Time**, then press **Tab.**
- The **Monitor Time** tells the system how often to monitor the network for ingest requests.
- The cursor moves to the **Screen Update Time** field.

10   Enter the **New Screen Update Time**, then press **Tab.**
- The **Screen Update Time** tells the system how often to update the **Monitor/Control** screen, which shows the current ingest request activity.

11   Click on the **OK** push button.
- Implements the changes entered.

12   Select another function by clicking on a widget tab.

13   To exit the **ECS Ingest** tool, select menu path **File / Exit**.

Table 16.2-10. Modify System Parameters - Quick-Step Procedures

Step	What to Enter or Select	Action to Take
1	**ECS Ingest** icon	**Single Click**
2	**Operator Tools** Tab widget	**Single Click**
3	**Modify System Parameters** toggle tab	**Single Click**
4	**New Volume Threshold**	**Single Click**
5	Enter the **New Volume Threshold**	**Press Tab**
6	Enter the **New Request Threshold**	**Press Tab**
7	Enter the **New Communication Retry Count**	**Press Tab**
8	Enter the **New Communication Retry Interval**	**Press Tab**
9	Enter the **New Monitor Time**	**Press Tab**
10	Enter the **New Screen Update Time**	**Press Tab**
11	**OK** push button	**Single Click**
12	Select another function/widget	**Single Click**
13	**File** / **Exit**	**Single Click and drag**

16.2.7.3   File Transfer

The **File Transfer** tool allows the DIT to transfer System Management Center (SMC) History and Generic files to the Science Community. The tool allows the DIT to build a SMC History File or select any file to be transferred from a specified source of origin to a destination desired by the user.

In the following procedure the DIT will invoke the **ECS Ingest** tool then select the **Operator Tools** tab widget. From the **Operator Tools** display screen the DIT will click on the **File Transfer** tab, then edit the **Volume Threshold, Request Threshold, Communication Retry Count, Communication Retry Interval, Monitor Time, and Screen Update Time** fields. If you are already familiar with the procedure, you may prefer to use the quick-step table at the end of the procedure. If you are new to the system, or have not performed this task recently you should use the following detailed procedure.

1   Click on the **ECS Ingest** icon. This assumes that the Ingest GUI is running, if the GUI is not up, then follow the steps for bringing up the Ingest GUI outlined in Section 16.2.1.
   - The **ECS Ingest** tool is opened.
   - The **Ingest Intro** screen is displayed.

2   Click on the **Operator Tools** tab widget.
   - The **Operator Tool** is opened.

3   Click on the **File Transfer** tab.
   - The **File Transfer** screen is displayed.

4   Click on **Build SMC History File** or the **Generic File Transfer** push button.

- The **Build SMC History File** creates selected file for operator transfer.
- The Generic File transfer allows any directory or file to be transferred.

5   Click on the **New Filter** field.
- The Cursor moves enters the field.

6   Enter the **New Filter**, then press **Tab.**
- The Cursor moves to **Directories** field.

7   At **Directories**, select desired table entry, then press **Tab**.
- The directory is entered into the **Selection** field.
- The Cursor moves to **Files** field.

8   At **Files**, select desired table entry, then press **Tab**.
- The file is added to the path entered in the Selection field.
- The Cursor moves to **Selection** field.

9   Click on the **OK** push Button in the **Transfer Origin** Box.

10   Enter the **New Transfer Destination** in the Transfer Destination field.

11   Click on the **OK** push button for **File Transfers** window.

12   Select another function by clicking on a widget tab.

13   To exit the **ECS Ingest** tool, select menu path **File / Exit**.

Table 16.2-11. File Transfer- Quick-Step Procedures

Step	What to Enter or Select	Action to Take
1	**ECS Ingest** icon	**single Click**
2	**Operator Tools** Tab widget	**single Click**
3	**File Transfer** toggle tab	**single Click**
4	**Click SMC Build History File or Generic File Transfer**	**single click**
6	Click the **New Filter, enter filter**	**press Tab**
7	Enter the **New Directories**	**press Tab**
8	Enter the **New Files**	**press Tab**
9	**OK** push button in **Transfer Origin**	**press Tab**
10	Enter the **New Transfer Destination**	**press Tab**
11	**OK** push button for window	**single Click**
12	Select another function/widget	**single Click**
13	**File/Exit**	**single Click and drag**

16.2.8 Physical Media Ingest

When the Science Community sends a data ingest request, the DIT can ingest data from physical media into the DAAC using the **Media Ingest** tool. Table 16.2-12 identifies the different types of physical media used within the ECS system ingest process. Each cartridge is identified by means of a bar code label that shows the media number.

Table 16.2-12. Physical Media Ingest Types

Media Type	Media Name	Media Purpose	Capacity
4mm	4 Millimeter cartridges	Ingest	120m 4Gb
8mm	8 Millimeter cartridges	Ingest	160m 7Gb
9 track	9 Track magnetic tape	Ingest	6.2 kb per inch
D3	D3 Cartridge tape	Ingest (EDC Only)	50 Gigabyte

Activity Checklist Table 16.2-13, provides an overview of **Physical Media Ingest** activities. Column one (**Order**) shows the order in which tasks should be accomplished. Column two (**Role**) list the Role/Manager/Operator responsible for performing the task. Column three (**Task**) provides a brief explanation of the task. Column four (**Section**) provides the Procedure (**P**) section number or Instruction (**I**) section number where details for performing the task can be found.

Table 16.2-13. Physical Media Ingest - Activity Checklist

Order	Role	Task	Section
1	DIT	Accessing 8mm/4mm/9 track Tape Drives and Stackers	(I) 16.2.8.1
2	DIT	Performing Media Ingest from 8mm Media Tape	(P) 16.2.8.2
3	DIT	Performing Media Ingest from D3 Tape (EDC only)	(P) 16.2.8.3

16.2.8.1   Accessing 8mm/4mm/9 track Tape Drives and Stackers

This section describes how to access the 8mm, 4mm and 9track tapes and drives as used by Media Ingest. Both types of tapes can be used for physical media data requests for the Ingest system. The DIT can start the Ingest process by accessing the appropriate tape, utilizing the Ingest GUI Interface and the tape stacker units. Each 8mm stacker contains two tape drives and can store up to 10 tapes. The 4mm stackers which also contain two tape drives can store up to 20 tapes.

> **Note: While data is being read from tape the GUI will not allow another function to be selected until data transfer is complete**

16.2.8.2 Performing Media Ingest from 8mm Tape

A **Delivery Record** file is required for **Media Ingest.** The **Delivery Record** file can either be embedded in the hard media or be made available electronically. If it is not embedded on the hard media, the **Delivery Record** must be in a specified network directory. The external data provider must ftp the **Delivery Record** file into the location prior to delivering the hard media. The **Delivery Record** identifies parameters such as data source, number of files, and location of data. The DIT will invoke the **ECS Ingest** tool, then click on the **Media Ingest** tab widget to display the screen.

In the following procedure the DIT will invoke the **ECS Ingest** tool then select the **Media Ingest** tab widget. A drop down menu can be used to select the Data Provider. The DIT will enter the **Media Volume ID** for each 8mm tape received, then press the add button. Each **Media Volume ID** number will be displayed in the box below the **Media Volume ID** field. The DIT can also change a **Media Volume ID** number by highlighting the Number and then pressing the **add** or **delete** button. The **Data Delivery Record File Location** can be selected by clicking on the **On Network,** or **Embedded in Media** buttons located in the radio box. The file name supplied by the Data Provider is entered in the **Data Delivery Record File Name** field. If you are already familiar with the procedure, you may prefer to use the quick-step table at the end of the procedure. If you are new to the system, or have not performed this task recently you should use the following detailed procedure.

1   Click on the **ECS Ingest** icon. This assumes that the Ingest GUI is running, if the GUI is not up, then follow the steps for bringing up the Ingest GUI outlined in section 16.2.1.
- The **ECS Ingest** tool is opened.
- The **Ingest Intro** screen is displayed.

2   Click on the **Media Ingest** tab widget.
- The **Media Ingest** screen is displayed.

3   Click on the **Media Type** field.
- Cursor moves to the **Media Type** field.

4   Choose the **Media Type**, then press **Tab.**
- Cursor moves to the **Stacker ID** field.

5   Enter the stacker ID in the **Stacker ID** field, then press **Tab.**
- Cursor moves to the **Stacker Slot ID** field.

6   Place the tape cartridge in a stacker slot.

7   Enter the stacker slot ID in the **Stacker Slot ID** field, then press **Tab.**
- Cursor moves to the **Data Provider** field.

8   Enter the **Data Provider**, then press **Tab.**
- A drop down option menu can also be used.
- The cursor moves to the **Media Volume ID (Barcode)** field.

9   Enter the **Media Volume ID** number from the tape.
- The **Media Volume ID** number is displayed in the display box below the **Media Volume ID** field.

10   Click on the **On Network** button located in the Radio Box.
- This tells the system that the **Delivery Record** is located on the Network.
- If the **Delivery Record** is embedded in the tape, select the **Embedded in Media** button.

11   **Click** on the **OK** button.
- Data transfer is initiated.

12   Select another function by clicking on a widget tab.

13   To exit the **ECS Ingest** tool, select menu path **File / Exit**.

Table 16.2-14. Performing Media Ingest from 8mm Tape - Quick Steps Procedures

Step	What to Enter or Select	Action to Take
1	**ECS Ingest** icon	**single Click**
2	**Media Type** Tab widget	**press Return**
3	**Media Type** field	**single Click**
4	Enter the **Media Type** (8mm)	**press Tab**
5	Enter the Stacker ID	**press Tab**
6	Place the 8mm tape cartridge in a 8mm stacker slot	
7	Enter the Stacker Slot ID	**press Tab**
8	Enter the **Data Provider**	**press Tab**
9	Enter the **Media Volume ID**	**press Tab**
10	**On Network** button	**single Click**
11	**OK** push button	**single Click**
12	Select another function/widget	**single Click**
13	**File** / **Exit**	**single Click and drag**

16.2.8.3 Performing Media Ingest from D3 Tape (EDC Only)

This section describes how to access the StorageTek Controller/Transport Redwood SD-3 for D3 tape processing as used by Media Ingest. The DIT can access the information stored on a D3 tape by utilizing the Ingest GUI Interface.

Once the extraction command has been executed the system will read the D3 tape from the header label then access the data needed for Ingest processing. Upon completion of the process the D3 tape will automatically rewind and eject itself from the tape drive.

If you are already familiar with the procedure, you may prefer to use the quick-step table at the end of the procedure. If you are new to the system, or have not performed this task recently you should use the following detailed procedure.

1 Compare the received medium to a media ingest readiness checklist to verify that everything needed for the media ingest is in order.
   - The media ingest readiness checklist includes the following types of checks:
      - PDR file is available, either placed on the network by the data provider or embedded in the medium.
      - Data provider has identified the PDR file name.
      - There is a unique Media Volume ID for each tape received.
      - An appropriate device (tape drive) is available to support the data transfer.

2 Verify that the display above the D3 tape unit indicates "*****".

3 Verify that there is **no** tape cartridge inserted in the D3 tape unit.
   - Remove the tape cartridge in the D3 tape unit (if applicable).

4 Verify that the **Ready** light is illuminated in the second row of the panel near the window of the D3 tape unit where the tape is inserted.
   - If the **Ready** light is not illuminated, push the **Ready** button.

5 Click on the **ECS Ingest** icon. This assumes that the Ingest GUI is running, if the GUI is not up, then follow the steps for bringing up the Ingest GUI outlined in section 16.2.1.
   - The **ECS Ingest** tool is opened.
   - The **Ingest Intro** screen is displayed.

6 Click on the **Media Ingest** tab widget.
   - The **Media Ingest** screen is displayed.

7 Click on the **Media Type** field.
   - Cursor moves to the **Media Type** field.

8 Enter the **Media Type**, then press **Tab.**

- To enter the type of medium (i.e., **D3 Tape**) click and hold on the option button to the right of the **Media Type** field, move the mouse cursor to the desired selection (highlighting it), then release the mouse button.
- The selected type of medium is displayed in the **Media Type** field.
- Cursor moves to the **Data Provider** field.

9 Enter the **Data Provider**, then press **Tab.**
- A drop down option menu can also be used.
- To enter the data provider (e.g., **SCF**) click and hold on the option button to the right of the **Data Provider** field, move the mouse cursor to the desired selection (highlighting it), then release the mouse button.
- The selected data provider is displayed in the **Data Provider** field.
- The cursor moves to the **Media Volume ID** field.

10 Enter the **Media Volume ID** number from the tape in the **Media Volume Id (Barcode)** field.
- The **Media Volume ID** number is displayed in the display box below the **Media Volume ID** field.

11 Click on the **On Network** button located in the Radio Box.
- This tells the system that the **Delivery Record** is located on the Network.
- If the **Delivery Record** is embedded in the tape, select the **Embedded in Media** button.

12 Enter the data delivery record file name (e.g., **scf11a.PDR**) in the **Data Delivery Record File Name** field.

13 Click (**once only**) on the **OK** button at the bottom of the GUI.
- The GUI **OK** button is sensitive to being clicked more than once. It is important to click it dead center once only or D3 ingest is likely to fail.

14 Insert the tape cartridge in the D3 tape drive.
- The tape cartridge must be inserted within one minute of clicking on the **OK** button on the Ingest GUI.
- The message "Loading" should be displayed on the D3 tape drive unit panel.
- Then the message "Ready" should be displayed on the D3 tape drive unit panel and the "ready" light should blink on and off for a while.
- Avoid clicking the mouse on the Ingest GUI while the D3 tape unit is reading the tape.
- Once the extraction command has been executed, the system reads the D3 tape from the header label, then accesses the data needed for Ingest processing.

15 When the data transfer has been completed, wait for the message "Ingest Request Completed."

- The messages "Rewinding" then "Unloading" should be displayed on the D3 tape drive unit panel as the D3 tape drive unit rewinds and unloads after the data transfer.
- Upon completion of the process the D3 tape automatically rewinds and ejects itself from the tape drive.

16   Remove the tape cartridge from the D3 tape drive.

17   Select another function by clicking on a widget tab.

18   To exit the **ECS Ingest** tool, select menu path **File / Exit**.

Table 16.2-15. Performing Media Ingest from D3 Tape -
Quick Steps Procedures

Step	What to Enter or Select	Action to Take
1	**ECS Ingest** icon	**Single Click**
2	**Media Type** Tab widget	**Press Return**
3	**Media Type** field	**Single Click**
4	Enter the **Media Type** (D3)	**Press Tab**
5	Enter the **Data Provider**	**Press Tab**
6	Enter the **Media Volume ID**	**Press Tab**
7	**On Network** button	**Single Click**
8	**OK** push button	**Single Click**
9	Insert D3 tape cartridge in the D3 Tape Drive	**Single Click**
10	**File** / **Exit**	**Single Click and drag**

16.3 Interactive Ingest Tool

A data provider can ingest data without direct operator action through the automated network. The interactive ingest is provided by an HTML web server interface that allows authorized science users the capability to ingest data electronically. The Data Provider will access the automated network Ingest HTML home page through **Netscape.**

The data provider will send a **Data Availability Notice** (**DAN**) to the Ingest Subsystem indicating that data is ready for transfer (Section 16.3.1). The **DAN** identifies parameters such as data source, number of files, and location of data. The Ingest Subsystem generates a **Data Availability Acknowledgment (DAA)**, which is sent to the Data Provider, indicating readiness to ingest the data identified in the **DAN**. The procedures to start the interactive ingest server and submit and ingest request can be found in (Section 16.3.2). To monitor the status of on-going requests see (Section 16.3.3). To view the ingest Completion status follow the procedures in (Section 16.3.4).

The Activity Checklist table that follows provides an overview of the **Interactive Ingest Tool** and its process. Column one (**Order**) shows the order in which tasks should be accomplished. Column two (**Role**) lists the Role/Manager/Operator responsible for performing the task. Column three (**Task**) provides a brief explanation of the task. Column four (**Section**) provides the Procedure (**P**) section number or Instruction (**I**) section number where details for performing the task can be found.

Table 16.3-1. Interactive Ingest - Activity Checklist

Order	Role	Task	Section
1	Data Provider / DIT	Creating a Data Availability Notice (DAN)	(P) 16.3.1
2	Ingest Subsystem	Generate and Send Data Availability Acknowledgement (DAA)	(P) 16.3.1
3	Data Provider	Submitting an Ingest Request	(P) 16.3.2
4	Data Provider	Monitoring On-Going Request Status	(P) 16.3.3
5	Data Provider	Viewing Ingest Completion Status	(P) 16.3.4

16.3.1 Creating a Data Availability Notice (DAN)

Before a Data Provider can ingest data into the ECS system a **Data Availability Notice** (**DAN**) must be sent to the Subsystem indicating that data is ready for transfer. The **DAN** specifies the parameters needed to identify what files are ready for pickup, the location, and how long it will be available in that location. The maximum message length allowed for a DAN is 1 megabyte. More than one DAN may be sent if needed.

Each DAN includes a Message Header, Exchange Data Unit (EDU) Label and Parameter Value Language (PVL) Statements. The Message Header and labels are in a contiguous string, followed by the PVL. The labels and PVL statements are in Standard Formatted Data Unit (SFDU) format. More information about SFDU and PVL can be found in the following documents: Consultative Committee for Space Data Systems (CCSDS), Standard Formatted Data Units-- Structure and Construction Rules, Consultative Committee for Space Data Systems (CCSDS) and Parameter Value Language Specification (CCSD0006, blue book).

The system will log the receipt of the **DAN** and assign a request ID number. A summary of the **DAN** contents is placed in the event log. The Ingest subsystem generates a corresponding ingest request and stores the request on a prioritized list. A **Data Availability Acknowledgment (DAA)** is sent from Ingest to the Data Provider indicating readiness to ingest the data identified in the **DAN**.

The procedure that follows explains the information needed to create a **DAN.** This procedure will assume the Data Provider has already used an xterm or SUN to obtain the **DAN** template. If you are familiar with the procedure, you may prefer to use the quick-step table at the end of this

procedure. If you are new to the system, or have not performed this task recently, you should use the detailed procedure that follows.

1   The **DAN Sequence Number** is system generated, therefore press **Tab.**
- The cursor moves to the **Expiration Time** field.

2   Enter the **Expiration Time**, then press **Return.**
- Time for data deletion from originating system.
- The cursor moves to the **Originating System** field.

3   Enter the **Originating System**, then press **Return.**
- The originator of the DAN.
- The cursor moves to the **Aggregate Length** field.

4   Enter the **Aggregate Length**, then press **Return**.
- Total number of bytes to transfer (Sum for all files).
- The cursor moves to the **Total File Count** field.

5   Enter the **Total File Count**, then press **Return.**
- Total number of files to transfer.
- The Cursor moves to the **Object** field.

6   Enter the **Object**, then press **Return.**
- The start of file group parameters (repeat for each group of files).
- The cursor moves to the **Data Type** field.

7   Enter the **Data Type**, then press **Return.**
- ECS Data Type.
- Cursor moves to **Node Name** field.

8   Enter the **Node Name**, then press **Return.**
- Name of the network node on which the file resides.
- The cursor moves to the **Descriptor** field.

9   Enter the **Descriptor**, then press **Return.**
- The string.
- The cursor moves to the **Object** field.

10   Enter the **Object**, then press **Return**.
- Start of Detached SFDU Header File Object, if appropriate.
- The cursor moves to the **File ID** field.

11   Enter the **File ID**, then press **Return.**
- The File Name.

- The cursor moves to the **File Type** field.

12   Enter the **File Type**, then press **Return.**
- The File Data Type.
- The cursor moves to the **Directory ID** field.

13   Enter the **Directory ID,** then press **Return.**
- The file directory name (i.e., path name).
- The cursor moves to the **File Size** field.

14   Enter the **File Size**, then press **Return.**
- The length of the file in bytes.
- The cursor moves to the **End Object** field.

15   Enter the **End Object**, then press **Return.**
- The End Detached SFDU Header File Object.

Table 16.3-2. Creating Data Availability Notice (DAN) - Quick-Step Procedures

Step	What to Enter or Select	Action to Take
1	**DAN Sequence Number (**system generated)	**press Tab**
2	Enter the **Expiration Time**	**press Return**
3	Enter the **Originating System**	**press Return**
4	Enter the **Aggregate Length**	**press Return**
5	Enter the **Total File Count**	**press Return**
6	Enter the **Object**	**press Return**
7	Enter the **Data Type**	**press Return**
8	Enter the **Node Type**	**press Return**
9	Enter the **Descriptor**	**press Return**
10	Enter the **Object**	**press Return**
11	Enter the **File ID**	**press Return**
12	Enter the **File Type**	**press Return**
13	Enter the **Directory ID**	**press Return**
14	Enter the **File Size**	**press Return**
15	Enter the **End Object**	**press Return**

16.3.2 Submitting an Ingest Request

The Science Data Provider can access the network ingest subsystem through **Netscape**. The following procedure describes the automated network ingest of data to ECS from data providers which will be accomplished without direct operator action. This procedure assumes that the DAN has already been created, which describes the location of the available data. The **Interactive Ingest Main Form** displays three options to the data provider; **Create DAN File, Submit Ingest Request,** and **Monitor On-Going Request Status.**

The following procedure will open the Interactive Ingest tool, then submit an ingest request. The Data Provider selects the files to be ingested from a list displayed on the **Submit Ingest Request** screen. If you are already familiar with the procedures, you may prefer to use the quick-step table at the end of this procedure. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure.

1   Click on the **Netscape Navigator** icon.

2   Enter the **URL** of the **Ingest Home Page**, then press **Return.**
- The Data Provider login page is displayed.

3   Enter the **Data Provider** name in the **ECS Data Provider** field, then press **Return.**
- The cursor movers to the Data Provider Password field.

4   Enter the **Data Provider Password,** in the **ECS Data Provider Password** field, then press **Return.**

5   Click on the **Submit Ingest Request** radio button.

6   Click on the **Submit** push button.
- The **Submit Ingest Request** screen is displayed.
- A list of data files are displayed.

7   Click on the **Data File** to be ingested.
- The data file number appears to the right of **Select Requests (s)**
- More than one file can be selected at one time.

8   Click on the **Submit** push button.
- The Ingest Request has been submitted.

9   Exit the **Interactive Ingest** system by following menu path **File → Quit.**

Table 16.3-3. Submitting an Ingest Request - Quick-Step Procedure

Step	What to Enter or Select	Action to Take
1	**Netscape Navigator** icon	**single Click**
2	Enter the **URL** of the **Ingest Home Page**	**press Return**
3	Enter **Data Provider**	**press Return**
4	**Enter Data Provider Password**	**press Return**
5	**Submit Ingest Request** radio button	**single Click**
6	**Submit** push button	**single Click**
7	**Data File**	**single Click**
8	**Submit** push button	**single Click**
9	**File → Quit**	**single Click and drag**

16.3.3 Monitoring On-Going Request Status

The on-going status of submitted data requests can be viewed by invoking the **Interactive Ingest Main Form,** then entering the **Data Providers** name and selecting the **Monitor On-Going Request Status** radio button. The **Ingest Request On-Going Status** screen displays all the active requests for the **Data Provider.** The **Ingest Request On-Going Status** screen displays each data request, its **Request ID** number and the acceptance or rejection of the data request. To display more details on a specific data request click on the individual data request, which opens the **On-Going Status Monitor** screen. From the **On-Going Status Monitor** screen click on the data request to display the Granule Level status.

The following procedure will open the **Interactive Ingest Tool**, then view the status of a data request at the granule level. If you are already familiar with the procedure, you may prefer to use the quick-step table at the end of this procedure. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure. If the **Interactive Ingest Main Form** has already been opened, skip steps 1 through 7, otherwise begin with step 1.

1   Click on the **Netscape Navigator** icon.

2   Enter the **URL** of the Ingest Home Page, then press **Return**

3   Enter the user **Password**, then press **Return.**

4   Enter the **Data Provider** name, then press **Return.**

5   Click on the **Monitor On-Going Request Status** radio button.

6   Click on the **Submit** push button.
- The **Ingest Request On-Going Status** screen is displayed.
- The following information is displayed for all active requests;
  a Data request file number
  b Acceptance or rejection of each request.

CSystem Request Id number.

7   Click on a **Individual Ingest Request**.
- The **On-Going Status Monitor** screen is opened, which displays:
- The **Request ID.**
- **State** of request .
- **% Complete**
- **Priority**
- **Start Time**
- **End Time**

8   Click on the **Request ID.**
- The **Granule Level Status Monitor** screen for the selected Request ID is opened, displaying the following information:
    – The **Request ID** number.
    – The **Status.**
    – The **Percent Complete.**
    – The **Data Provider.**
    – The **Ingest Type.**
    – The **Priority.**
    – The **Process Start Time.**
    – The **Expiration Time**.
    – The **Granule Count.**
    – The **Data Volume.**
    – The **Data Type.**
    – The **Granule Volume.**
    – The **Granule State.**

9   Exit the **Interactive Ingest** system by following menu path **File → Quit.**

Table 16.3-4. Monitoring On-Going Request Status -
Quick-Step Procedures

Step	What to Enter or Select	Action to Take
1	**Netscape Navigator** icon	**single Click**
2	Enter the **URL** of the Ingest Home Page	**press Return**
3	Enter **Password**	**press Return**
4	Enter the **Data Provider**	**press Return**
5	**Monitor On-Going Request Status** radio button	**single Click**
6	**Submit** push button	**single Click**
7	**Individual ingest Request**	**single Click**
8	**Request ID**	**single Click**
9	**File → Quit**	**single Click and drag**

16.4 Ingest Polling Process

The **ECS Ingest Subsystem** supports a transfer mechanism to acquire data from a supplier system (Data Provider). This process is called Polling. There are two Polling processes supported, **Polling Ingest with Product Delivery Record** (Section 16.4.1), and **Polling Ingest without Product Delivery Record** (Section 16.4.2)**. Ingest Information Notifications** that are received from, and sent to the Data Provider during this process will be addressed in Section 16.4.3. Ingest Archive Verification is discussed in Section 16.4.4.

The Activity Checklist table that follows provides an overview of the **Ingest polling Subsystem** process. Column one (**Order**) shows the order in which tasks should be accomplished. Column two (**Role**) list the Role/Manager/Operator responsible for performing the task. Column three (**Task**) provides a brief explanation of the task. Column four (**Section**) provides the Procedure (P) section number or Instruction (I) section number where details for performing the task can be found.

Table 16.4-1. Ingest Polling - Activity Checklist

Order	Role	Task	Section
1	DIT	Polling Ingest With Product Delivery Record (PDR)	(I) 16.4.1
2	DIT	Polling Ingest Without (PDR)	(I) 16.4.2
3	DIT	Ingest Information Notifications	(P)16.4.3
4	DIT	Ingest Archive Verification	(P)16.4.4
5	DIT	Deleting Files from the Ingest Polling Directory	(P)16.4.5

16.4.1 Polling Ingest With Product Delivery Record

ECS periodically checks on an agreed-upon network location for a **Product Delivery Record (PDR)** file. The **PDR** file contains information identical to that in a **DAN**, see (Section 16.3.1). The Data Provider may have previously transferred the data to a working storage device within ECS**,** otherwise an ftp "get" will be used to obtain the data from the Data Provider within a specified time window. The Data Provider and the ECS Ingest Subsystem are each equipped with a computer program that invokes an FTP daemon, which automatically polls the server supplying the data.

The periodic polling process detects and then acquires a **PDR.** The Ingest subsystem then validates the information contained in the **PDR.** If the system is unable to read the **PDR**, a **Data Availability Acknowledgment** (**DAA**) is sent to the Data Provider indicating an invalid **PDR.** If the Ingest Subsystem is able to read the **PDR,** a request ID is assigned and the **PDR,** and its contents are placed in the **Event Log.** A **DAA** is sent to the Data Provider indicating readiness to ingest the data identified in the **PDR.** Ingest generates a corresponding ingest request and stores the request on a prioritized list. The Ingest function ensures that all required devices are allocated

and schedules and performs the data transfer. After the data has been transferred, a **Data Delivery Notice** is sent to the Data Provider indicating that the archiving of the data identified in the **PDR** has been completed.

The DIT may monitor the status of any ingest request by using the **Monitor/Control** screen of the **ECS Ingest Tool** (Section 16.2.4). The Ingest process is automated, however there are several sequences in which errors can be encountered which will cause the process to stop, requiring Operator intervention (see Section 16.4.4). The Event log will be updated during each phase of the Ingest process, therefore the DIT can easily access the status of any request. If intervention is required, the Computer Operator and/or DIT can Suspend, Cancel or Resume the Ingest process by using the **Operator Tools** of the **ECS Ingest** subsystem (Section 16.2.5).

16.4.2 Polling Ingest Without Product Delivery Record

This mechanism is planned to be used for the transfer of certain ancillary products required for data processing. The ingest subsystem periodically polls an agreed-upon network location for the presence of data. All data at the specified location are assumed to make up a collection of ingest data with one file per data granule. The ingest function automatically performs an ftp get from the Data Provider within a system tunable time window. The data goes through the usual ingest verification process of format conversion and metadata extraction and validation, with status messages going to the event log. When the ingest process has been completed, a message is sent to the **History Log** (Section 16.2.3), the polling interval is reset, and the system enters a wait state.

16.4.3 Ingest Information Notifications

During the Ingest process several Information Notices are sent to the Data Provider, the Ingest subsystem, and the event log. The first notice is from the Data Provider, informing the ingest subsystem that data is ready for transfer. This notice is called a **Data Availability Notice (DAN)** or **Product Delivery Record (PDR).** Both notices contain the same information, such as data source, number of files, and location of data. When the subsystem receives the **DAN** or **PDR** it sends a message back to the Data Provider to acknowledge the receipt of the **DAN** or **PDR**. The return message is called a **Data Availability Acknowledgment (DAA).** The Ingest system automatically logs all of the messages into the event log, therefore the DIT can obtain the current status of an ingest request at any time. If an error occurs during the ingest process another **DAA** is sent to the Data Provider and to the event log explaining the problem. When the ingest process has been completed, the system generates a **DATA Delivery Notice (DDN),** which is sent to the Data Provider. The Data Provider then returns a **Data Delivery Acknowledgment (DDA)** in response to the **DDN** and terminates the session. Ingest provides a status message to the **Ingest History Log** when the transaction is complete.

The following section describes the steps needed to view the information contained in the notices for a specific Data Provider. The DIT can view the contents of any notice through the **ECS Ingest tool**. If you are familiar with the procedure, you may prefer to use the quick-step table at

the end of this procedure. If you are new to the system, or have not performed this task recently, you should use the detailed procedure that follows.

1   Click on the **ECS Ingest** icon. This assumes that the Ingest GUI is running, if the GUI is not up, then follow the steps for bringing up the Ingest GUI outlined in section 16.2.1.
  •   The **ECS Ingest** tool is now open.
  •   The **Ingest Introduction** screen is displayed.

2   Click on the **Monitor/Control** tab widget.
  •   The **Monitor/Control** screen is displayed.

3   Click on the **Data Provider** button, in the radio box.
  •   The cursor moves to the periodic box to the right of the Data Provider.

4   Enter the **Data Provider**, then press **Return.**

5   Click on the **Text view** button.

6   Click on the **OK** push button.
  •   All ongoing ingest requests for the Data Provider are displayed, including the Informational Notices.

7   Highlight an individual request, then **double Click.**
  •   Text is displayed at a granule level.

8   Exit the **ECS Ingest** tool by following menu path **File → Exit.**

Table 16.4-2. Ingest Information Notification - Quick-Step Procedures

Step	What to Enter or Select	Action to Take
1	**ECS Ingest** icon	**single Click**
2	**Monitor/Control** tab widget	**single Click**
3	**Data Provider** radio button	**single Click**
4	Enter the **Data Provider**	**press Return**
5	**Text view** button	**single Click**
6	**OK** push button	**single Click**
7	**Highlight** individual request	**double Click**
8	Follow menu path	**File → Exit**

16.4.4 Ingest Archive Verification

In an effort to verify that the data ingested has been archived successfully, the following steps are used to verify whether data is present on the archive. This procedures makes it unnecessary to

get into any archive software. This procedure is pretty straight forward and safe so don't worry about doing anything strange and wonderful to the system. Good luck. The aster, ceres, data, l7, and modis directories correspond directly to tape volumes in the system. The data is listed in the Amass data base and is actually on tape.

1 Log on to any workstation.

2 Type in your **login** and **password**.

3 Enter **telnet <hostname>**.   Example **telnet g0drg01.**

4 Set your terminal display environment using the command:
setenv DISPLAY <hostname:0.0>

5 Type in your **login** and **password**.

6 Change directory to the directory containing the location of the archive data:
cd   /dss_stk1

7 Enter **ls** to list the contents of the directory.
   • Should see OPS, TS1, TS2, and test mode directories

8 Change directory to the directory containing the mode used:
cd   [OPS, TS1, TS2, test]

9 Enter **ls** to list the contents of the directory.
   • Should see aster, ceres, data, 17, and modis directories

10 Change directory to the directory containing the location of the type of data ingested:
cd   [aster, ceres, data, 17, and modis]

11 Enter **ls** to list the contents of the directory.
   • Should see data listed on tape in the archive.

Table 16.4-3. Ingest Archive Verification - Quick-Step Procedures

Step	What to Enter or Select	Action to Take
1	Telnet <hostname>	**press Return**
2	UserId	**press Return**
3	Password	**press Return**
4	setenv DISPLAY <hostname:0.0>	**press Return**
5	cd /dss_stk1	**press Return**
6	cd [OPS, TS1, TS2, test]	**press Return**
7	cd [aster, ceres, data, 17, and modis]	**press Return**
8	ls	**press Return**

16.4.5 Deleting Files from the Ingest Polling Directory

The Ingest Polling Directory does not get cleaned up automatically after a successful archive. At the present time this process is being done manually. The EcInPollClean script was delivered in Drop4PX to manually clean the EDOS polling directory, which is where the problem was first identified. The EcInPollClean script will clean all files in the specified directory (to include all files in subdirectories, if any) that are older than the specified time.   The script requires two inputs, the name of the path containing the files to be deleted, and the number of days. If you are already familiar with the procedure, you may prefer to use the quick-step table at the end of the procedure. If you are new to the system, you should use the following detailed procedures:

1   Log in to any workstation using your user identifier and password by typing *YourUserID*, and then press **Return**.
- A password prompt is displayed.

2   Enter *YourPassword*, then press **Return**.
- You are authenticated as yourself.

3   Enter **telnet <hostname>**.   Example **telnet g0drg01.**

4   Enter *YourUserID*, and then press **Return**.
- A password prompt is displayed.

5   Enter *YourPassword*, then press **Return**.
- You are authenticated as yourself.

6   Set your terminal display environment using the following command:
setenv DISPLAY <hostname:0.0>

7   Change directory to the directory containing the Ingest EcInPollClean script file:
cd /usr/ecs/<mode>/CUSTOM/utilities

8   Enter **ls** to list the contents of the directory:

9   Execute the EcInPollClean script using the following command:
EcInPollClean <path name> <number of day>

Table 16.4-4. Deleting Files From the Ingest Polling Directory - Quick-Steps

Step	What to Enter or Select	Action to Take
1	YourUserID	**press Return**

2	YourPassword	**press Return**
3	telnet <hostname>	**press Return**
4	YourUserID	**press Return**
5	YourPassword	**press Return**
6	setenv DISPLAY <hostname:0.0>	**press Return**
7	cd /usr/ecs/<mode>/CUSTOM/utilities	**press Return**
8	Ls	**press Return**
9	EcInPollClean <path name> <number of day>	**press Return**

16.5 Recovery from a Data Ingest Failure

When an ingest fault (error) occurs, there may be a requirement for action to recover from the error. Recovery actions may be made necessary by invalid DAN contents or other errors that result in data ingest failure. When a fault (error) occurs, the following actions occur:

- The processing of the ingest request stops.
- A message is sent to the Ingest/Distribution Technician and the data provider with a brief description of the problem.

The Ingest/Distribution Technician may use the Ingest GUI Monitor/Control screen, the Ingest History Log (refer to the section on Ingest Status Monitoring) and/or the following log files (in the /usr/ecs/*mode*/CUSTOM/logs directory on the ingest host machine) to review the failure event:

- EcInReqMgr.ALOG (ingest request manager log).
- EcInAuto.ALOG (automated ingest log).
- EcInPolling.ALOG (polling ingest log).
- EcInGran.ALOG (granule server log).
- EcInGUI.ALOG (Ingest GUI log).

In addition, it is possible to check the ECS Event Log (for events related to ingest failure) using the ECS Event Log Browser tab on the Management Data Access (MDA) GUI.

This section contains some examples of faults that are likely to occur, describes the notifications provided, and proposes operator actions in response to each fault situation. The specific recovery actions may vary due to operator preference or local DAAC policy.

The Activity Checklist table that follows provides an overview of the Recovery from a Data Ingest failure process.   Column one (**Order**) shows the order in which tasks should be accomplished. Column two (**Role**) list the Role/Manager/Operator responsible for performing the task. Column three (**Task**) provides a brief explanation of the task. Column four (**Section**) provides the Procedure (**P**) section number or Instruction (**I**) section number where details for performing the task can be found.

Table 16.5-1. Recovery from a Data Ingest Failure - Activity Checklist

Order	Role	Task	Section
1	DIT	Troubleshooting a Data Ingest Failure	(P)16.5.1
2	DIT	Recovering from a Faulty DAN	(P)16.5.2
3	DIT	Recovering from Exceeding the Volume Threshold	(P)16.5.3
4	DIT	Recovering from Exceeding the Maximum Number of Concurrent Requests	(P)16.5.4
5	DIT	Recovering from Insufficient Disk Space	(I) 16.5.5
6	DIT	Recovering from Exceeding the Expiration Date/Time Period	(P)16.5.6
7	DIT	Recovering from File Transfer (ftp) Error	(P)16.5.7
8	DIT	Recovering from Processing Errors	(P)16.5.8

16.5.1 Troubleshooting a Data Ingest Failure

When troubleshooting a data ingest failure, use the procedure that follows. The procedure starts with the assumption that all applicable servers and the Ingest GUI are currently running and the **Monitor/Control** (**All Requests)** screen is being displayed.

Upon receipt of the operator alert, use the **Monitor/Control** screen scroll bars as necessary to identify the faulty ingest request.
- When there is a data ingest failure, the system provides the following three responses:
    – Logs the error.
    – Alerts the Ingest/Distribution Technician.
    – Returns a DDN to the data provider indicating the nature of the failure.

Review the information concerning the faulty ingest request.

If additional information is needed, open and read the appropriate log file in the **/usr/ecs/*mode*/CUSTOM/logs** directory on the ingest host machine.
- **EcInReqMgr.ALOG** (ingest request manager log).
- **EcInAuto.ALOG** (automated ingest log).
- **EcInPolling.ALOG** (polling ingest log).
- **EcInGran.ALOG** (granule server log).
- **EcInGUI.ALOG** (Ingest GUI log).

Perform the appropriate recovery procedure depending on the nature of the problem:
- **Recovering from a Faulty DAN.**
- **Recovering from Exceeding the Volume Threshold.**
- **Recovering from Exceeding the Maximum Number of Concurrent Requests.**
- **Recovering from Insufficient Disk Space.**
- **Recovering from Exceeding the Expiration Date/Time Period.**
- **Recovering from File Transfer (ftp) Error.**
- **Recovering from Processing Errors**.

16.5.2 Recovering from a Faulty DAN

If the DAN/PDR is invalid, the data provider must submit a new DAN. The DIT should respond to the error by contacting the data provider to give an alert that the ingest failure has occurred,

provide as much information as possible about why the failure occurred, and determine whether the data ingest request will be re-initiated. When working to recover from an invalid DAN/PDR, use the procedure that follows. The procedure starts with the following assumption that the Ingest GUI **Monitor/Control** (**All Requests)** screen is being displayed.

1　　　Upon receipt of the operator alert, use the **Monitor/Control** screen scroll bars as necessary to identify the faulty ingest request.
2　　　Review the information concerning the faulty ingest request.
3　　　If additional information is needed, open and read the appropriate log file in the **/usr/ecs/*mode*/CUSTOM/logs** directory on the ingest host machine.
4　　　Contact (by telephone or e-mail) the data provider to discuss the following issues:
  - Report the ingest failure.
  - Discuss what has been discovered from reviewing the failure event data.
  - Determine whether the data provider will re-initiate the data ingest request with a new DAN.
5　　　If the data ingest request is to be re-initiated, monitor the subsequent ingest as described in the procedure for **Monitoring Ingest Requests**.

16.5.3 Recovering from Exceeding the Volume Threshold

Data Ingest may fail for reasons other than invalid DAN/PDR contents. For example, if the specified system volume threshold has been exceeded, the system sends a DDN to the Data Provider indicating that the system is full and an attempt should be retried again later.   If a data provider's volume threshold has been exceeded, use the procedure that follows. The procedure starts with the following assumption that the Ingest GUI **Monitor/Control** (**All Requests**) screen is being displayed.

1　　　Upon receipt of the operator alert, use the **Monitor/Control** screen scroll bars as necessary to identify the faulty ingest request.
2　　　Review the information concerning the faulty ingest request.
3　　　If additional information is needed, open and read the appropriate log file in the **/usr/ecs/*mode*/CUSTOM/logs** directory on the ingest host machine.
4　　　If it is decided to increase the system volume threshold, first click on the **Operator Tools** tab.
  - The **Operator Tools** screen is displayed.
5　　　Click on the **Modify System Parameters** tab.
  - The **Modify System Parameters** screen is displayed.
6　　　Click in the **New:** field corresponding to **Volume Threshold**, then type the numerical value for the new volume threshold.
  - The *current* value of the volume threshold is printed on the corresponding line for reference purposes.
7　　　Click on the **OK** button at the bottom of the **Operator Tools: Modify System Parameters** tab to save the changes to system parameters.
  - The changes are invoked.
8　　　Click on the **Monitor/Control** tab.
  - The **Monitor/Control** screen is displayed.

9   Click on the **All Requests** button.
- Alternatively, either a particular **Data Provider** or **Request ID** may be specified as described in the procedure for **Monitoring Ingest Requests**.

10   Click on the **Text View** button.

11   If the data ingest request is to be re-initiated, monitor the subsequent ingest as described in the procedure for **Monitoring Ingest Requests**.

16.5.4 Recovering from Exceeding the Maximum Number of Concurrent Requests

If the specified system request threshold has been exceeded, the system sends a DDN to the Data Provider indicating that the system is full and an attempt should be retried again later. If a data provider's request threshold has been exceeded, use the procedure that follows to increase the system request threshold. The procedure starts with the following assumptions that the Ingest GUI **Monitor/Control** (**All Requests)** screen is being displayed.

1   Upon receipt of the operator alert, use the **Monitor/Control** screen scroll bars as necessary to identify the faulty ingest request.

2   Review the information concerning the faulty ingest request.

3   If additional information is needed, open and read the appropriate log file in the **/usr/ecs/*mode*/CUSTOM/logs** directory on the ingest host machine.

4   If it is decided to increase the system request threshold, first click on the **Operator Tools** tab.
- The **Operator Tools** screen is displayed.

5   Click on the **Modify System Parameters** tab.
- The **Modify System Parameters** screen is displayed.

6   Click in the **New:** field corresponding to **Request Threshold**, then type the numerical value for the new volume threshold.
- The *current* value of the request threshold is printed on the corresponding line for reference purposes.

7   Click on the **OK** button at the bottom of the **Operator Tools: Modify System Parameters** tab to save the changes to system parameters.
- The changes are invoked.

8   Click on the **Monitor/Control** tab.
- The **Monitor/Control** screen is displayed.

9   Click on the **All Requests** button.
- Alternatively, either a particular **Data Provider** or **Request ID** may be specified as described in the procedure for **Monitoring Ingest Requests**.

10   Click on the **Text View** button.

11   If the data ingest request is to be re-initiated, monitor the subsequent ingest as described in the procedure for **Monitoring Ingest Requests**.

16.5.5 Recovering from Insufficient Disk Space

After the receipt of the DAN**,** a disk space allocation is requested from the Data Server, and a time-out timer for the disk allocation is set. In the event that the Data Server has insufficient disk space, the time-out timer will expire. The Ingest Subsystem notifies the operator that the ingest

request is waiting for Data Server disk allocation. At present the Ingest/Distribution Technician has no real option for responding to the problem except perhaps to discuss the situation with the system administrator.

16.5.6 Recovering from Exceeding the Expiration Date/Time Period

If data are unavailable but the time period during which that data were to have been made available has expired, the error is logged in the event log, and a DDN is sent to the Data Provider indicating expiration date/time exceeded. The Ingest/Distribution Technician receives an alert on his/her screen, then contacts the data provider to resolve the problem. If a data provider's expiration date/time period has been exceeded, use the procedure that follows. The procedure starts with the assumption that the Ingest GUI **Monitor/Control** (**All Requests)** screen is being displayed.

1   Upon receipt of the operator alert, use the **Monitor/Control** screen scroll bars as necessary to identify the faulty ingest request.
2   Review the information concerning the faulty ingest request.
3   If additional information is needed, open and read the appropriate log file in the **/usr/ecs/***mode***/CUSTOM/logs** directory on the ingest host machine.
4   Contact (by telephone or e-mail) the data provider to discuss the following issues:
- Report the ingest failure.
- Discuss what has been discovered from reviewing the failure event data.
- Determine whether the data provider will re-initiate the data ingest request.
If the data ingest request is to be re-initiated, monitor the subsequent ingest as described in the procedure for **Monitoring Ingest Requests**.

16.5.7 Recovering from File Transfer (ftp) Error

After numerous unsuccessful data transfer retries, an error is logged into the event log, the Ingest/Distribution Technician is notified and a DDN is sent to the Data Provider indicating ftp failure. The Ingest/Distribution Technician reviews all current ingest requests using the **Operator Tool** of the **ECS Ingest** GUI to determine whether other communication-related failures have occurred and may consult with the data provider(s) to resolve the problem. If it is necessary to recover from a file transfer error, use the procedure that follows. The procedure starts with the assumption that the Ingest GUI **Monitor/Control** (**All Requests)** screen is being displayed.

1   Upon receipt of the operator alert, use the **Monitor/Control** screen scroll bars as necessary to identify the faulty ingest request.
2   Review the information concerning the faulty ingest request.
3   If additional information is needed, open and read the appropriate log file in the **/usr/ecs/***mode***/CUSTOM/logs** directory on the ingest host machine.
4   Click on the Ingest GUI **Operator Tools** tab.
- The **Operator Tools** screen is displayed.
5   Click on the **Modify System Parameters** tab.
- The **Modify System Parameters** screen is displayed.
6   Review the current value for **Communication Retry Count**.

7   If it is decided to increase the communication retry count, follow the procedure for **Modifying System Parameters**.

8   If the data ingest request is to be re-initiated, monitor the subsequent ingest as described in the procedure for **Monitoring Ingest Requests**.

16.5.8 Recovering from Processing Errors

Ingest processing errors may require Ingest/Distribution Technician intervention. The following problems are examples of processing errors.

- **Missing Required Metadata.**
- **Unknown Data Type.**
- **Template Out of Synchronization (Sync).**
- **Unavailable File Type.**
- **Metadata Validation Error.**
- **Missing Optional Data Files.**

If it is necessary to recover from a processing error, use the procedure that follows. The procedure starts with the assumption that the Ingest GUI **Monitor/Control** (**All Requests)** screen is being displayed.

1   Upon receipt of the operator alert, use the **Monitor/Control** screen scroll bars as necessary to identify the faulty ingest request.

2   Review the information concerning the faulty ingest request.

3   If additional information is needed, open and read the appropriate log file in the **/usr/ecs/*mode*/CUSTOM/logs** directory on the ingest host machine.

4   If the processing error involves missing required metadata or an unknown data type, contact (by telephone or e-mail) the data provider to request the data provider to make the necessary corrections and re-initiate ingest.

5   If the processing error involves an out-of-sync template or an unavailable file type, submit a trouble ticket in accordance with the trouble ticketing procedures.

6   If the processing error involves a metadata validation error or missing optional data files and if the processing template instructions indicate to continue inserting the data, contact (by telephone or e-mail) the data provider to provide notification that the data have been flagged as bad.

- If the processing template instructions indicate to continue inserting the data, the following events occur:
  - The error is logged in the event log,
  - The data are flagged as bad.
  - A preprocessing failure alert for each data granule appears on the Ingest/Distribution Technician's screen.
  - A Metadata Problem Report is generated.

7   If the processing error involves a metadata validation error or missing optional data files and if the processing template instructions require the rejection of the data, contact (by telephone or e-mail) the data provider to request the data provider to make the necessary corrections and re-initiate ingest.

- If the template instructions require the rejection of the data, the normal notices and alerts are sent, including a DDN to the external data provider indicating the preprocessing failure.

8   If the data ingest request is to be re-initiated, monitor the subsequent ingest as described in the procedure for **Monitoring Ingest Requests**.

16.6 Document Ingest

The Ingest subsystem will not include any capabilities for document ingest in B.0. All ingest will be done manually by operators via ftp pull. Operators are notified of the need to pull a document by phone or e-mail.

The ingest format will remain as originally planned, i.e., it will follow the established document ingest formats. That is, the document submitter must prepare a set of document files in one of the approved ECS formats, an accompanying valid metadata file, and a valid DAN.

The document data server (DDSRV) host will include a directory to keep B.0 ingest requests. The directory name is **TBS**. By operational procedures, operators are expected to create a subdirectory in that directory for each ingest and deposit the files as ingested into that subdirectory. The purpose of the subdirectory is to retain ingested material for subsequent "real" ingest into ECS once the DDSRV and the document ingest functions are implemented. The naming conventions for these subdirectories are **TBS**.

The documents will be placed by operational procedure into directories on the DDSRV Netscape Server host. The directory names must be in compliance with B.0 directory naming conventions, but are otherwise at the discretion of DAAC Ops. DAAC Ops will be responsible for creating web pages on the DDSRV Netscape host which point to these documents, and provide links to these web pages from relevant other ECS web pages.

16.6.1 Document Inserts From Within ECS

Documents generated automatically within ECS will be associated with fixed pathnames on the DDSRV host (if the DDSRV will store always only one occurrence of the document), or fixed directories on the DDSRV host (if there will be multiple instances of the document kept on the DDSRV).

Documents which are planned for insertion into the DDSRV from within ECS (e.g., algorithm documentation) by manual procedure, will have their procedure changed to provide ingest documentation, generate a DAN, have the document placed into an "archive" directory, and then have the document placed into a DDSRV directory.

The providers of documents generated automatically by ECS or inserted manually, are responsible for having web pages produced and stored on the DDSRV Netscape server host pointing to the documents. The web pages must be compliant with the ECS HTML guidelines. DAAC operations are free to add links to them in other ECS web pages.

DAAC Ops will maintain and update any web pages needed to support access to the documents on the B.0 DDSRV web server. The web pages are placed into directories named in accordance with the Release B.0 directory naming conventions, but the names are otherwise at the discretion of DAAC Ops

There is no guarantee that the B.0 URLs for DDSRV documents will be valid for these documents in B.1.

If documents are updated, the updated versions need to go through the manual ingest procedure to ensure that they can be ingested into B.1.

DDSRV is responsible for any configuration tailoring of the DDSRV Netscape Server.

SSI&T will need to produce and save a DAN for the documents which are part of a DAP/SSAP.

16.6.2 Scanning Documents

This procedure will take you step by step in operating the **HP Jetscan Scanner** to create a temporary file for data to be downloaded to the system for archiving documents. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure;

1   Click on the **Start** button.

2   Select **Programs**.

3   Select **TexBridge Pro 96** to access the TexBridge software for scanning   documents consisting of both text and tables.
- Select **TexBridge Pro 96** once again within the second column.
- When the **TexBridge Pro 96** screen appears insure that the following 5 options are listed as follows.

Page Quality / Page Orientation / Original Document Layout / Document Recomposition / Brightness

Auto	Auto	Auto	Recompose All	Auto

4   Select **Save Image Defer OCR** this is the 8th icon to far right of the screen.

5   Load documents into HP ScanJet feeder.

6   Click **Go** this will start the scanning process.

7   When the document has been scanned, save the document with a valid file name.

This process will require a filename to be created **"when saving"** the data before the data information can be accessed in the system for verification.

Table 16.6-1. Scanning Documents - Quick-Step Procedures

Step	What to Enter or Select	Action to Take
1	Select **Start** from the Windows 95 menu bar	**single Click**
2	Select **Programs**	**single Click**
3	Select **TexBridge Pro 96**	**single Click**
4	If scanning both text and table select **Save Image Defer OCR**	**single Click**
5	Load documents into **HP ScanJet feeder**	
6	**Click Go**	**single Click**

16.6.3 Accessing Scanned Documents

After a document has been scanned, it should be checked to ensure that it has been properly scanned and saved. The procedure for accessing scanned documents starts with the assumption that the Ingest/Distribution Technician has logged in to Windows 95 on the applicable personal computer (PC). Upon completion of the above procedure follow the step to access the scanned files you've just created.

1   Select **Start** from the Windows 95 menu bar.

2   Select **Programs**

3   Select **Windows Explorer** from the file menu.

4   Click **Program files** under this option

5   Select **TexBridge Pro 96**

6   Click folder called **Tiffs**

7   Select the filename/s you created from the documents you've just scanned.

Table 16.6-2. Opening Tiffs File - Quick-Step Procedures

Step	What to Enter or Select	Action to Take
1	Select **Start** from the Windows 95 menu bar	**single Click**
2	Select **Programs**	**single Click**
3	Select **Windows Explorer**	**single Click**

4	Select **Program Files**	**single Click**
5	Select **TexBridge Pro 96**	**single Click**
6	**Click Tiffs file**	**single Click**
7	Select the file you created	**single Click**

16.7 ECS Science Data Server Operator Tool

The **ECS Science Data Server Operator** tool has two tab widgets; **Data Types**, and **System Requests**. The **Data Types** (Section 16.6.1) screen provides the DIT the capability to view and add data types in the system. The **System Requests** (Section 16.6.2) screen provides the capability to monitor the processing of system requests.

The Activity Checklist table that follows provides an overview of the Science Data Server Operator tool and its functions. Column one (**Order**) shows the order in which tasks should be accomplished. Column two (**Role**) lists the Role/Manager/Operator responsible for performing the task. Column three (**Task**) provides a brief explanation of the task. Column four (**Section**) provides the Procedure (**P**) section number or Instruction (**I**) section number where details for performing the task can be found.

Table 16.7-1. ECS Science Data Server Operator Tool -
Activity Checklist

Order	Role	Task	Section
1	DIT	Starting the Science Data Server Operator GUI	(P)16.7.1
2	DIT	View Science Data Server Data Type Information	(P)16.7.2
3	DIT	Add Science Data Server Data Types	(P)16.7.3
4	DIT	View Science Data Server Descriptor Information	(P)16.7.4
5	DIT	Monitor Science Data Server Request Processing	(P)16.7.5
6	DIT	Change Science Data Server Polling Rate	(P)16.7.6

16.7.1 Starting the Science Data Server Operator GUI

Starting the Science Data Server Operator GUI in normal operations will be just a matter of clicking an icon that appears on your desktop. Because the desktop configurations have not been installed to date it will be necessary to follow the interim procedure described below. Starting the Science Data Server Operator GUI assumes that the applicable servers are running and the DIT has logged in. If you are already familiar with the procedure, you may prefer to use the quick-step table at the end of the procedure. If you are new to the system, you should use the following detailed procedures:

1   Type **xhost** + at the command shell prompt and then press **Return**.

2   Bring up the Science Data Server Operator GUI server, if it has not already been brought up. From a SUN workstation or NCD X-Term terminal telnet into the Science Data Server Operator GUI Server. Enter **telnet <hostname>**. Example **telnet g0acs03.**

3   Log into the Science Data Server Operator workstation using your user identifier and password by typing *YourUserID*, and then press **Return**.
-     A password prompt is displayed.

4   Enter *YourPassword*, then press **Return**.
-     You are authenticated as yourself.

5   Set your terminal display environment using the following command:
setenv DISPLAY <hostname:0.0>

6   Select the mode you are working in using the following command:
<mode>ts1, ts2, or ops

7   Change directory to the directory containing the Science Data Server Operator GUI command file:
 cd/usr/ecs/<mode>/CUSTOM/utilities

8   List the contents of the directory to locate the Science Data Server Operator GUI start script using the following command:
ll or ls

9   Start the Science Data Server Operator GUI using the following command:
 EcDsSdSrvGuiStart <mode>
-     The **ECS Science Data Server Operator** tool is opened.
-     The **Science Data Server – Data Types** screen is displayed.

Table 16.7-2. Starting Science Data Server Operator GUI - Quick-Steps

Step	What to Enter or Select	Action to Take
1	xhost +	press Return
2	telnet <hostname>	press Return
3	YourUserID	press Return
4	YourPassword	press Return
5	setenv DISPLAY <hostname:0.0>	press Return
6	<mode>	press Return
7	cd /usr/ecs/<mode>/CUSTOM/utilities	press Return
8	ll or ls	press Return
9	EcDsSdSrvGuiStart <mode>	press Return

16.7.2 View the Science Data Server Data Type Information

The DIT can view Science Data Server data type information by viewing the entries on the **Science Data Server – Data Types** screen. Entries are listed by Archive ID, Earth Science Data Type name, version number, and a brief description. The listing includes all of the entries in the Science Data Server database.

The following procedure explains how to view Science Data Server data type information. If you are already familiar with the procedure, you may prefer to use the quick-step table at the end of the procedure. If you are new to the system, you should use the following detailed procedures:

1   Click on the **ECS Science Data Server Operator GUI** icon. This assumes that the Science Data Server Operator GUI is running, if the GUI is not up, then follow the steps for bringing up the Science Data Server Operator GUI outlined in section 16.7.1.
- The **ECS Science Data Server Operator** tool is opened.
- The **Science Data Server – Data Types** screen is displayed.

2   Move the cursor up and down to locate the specific data type of interest.

3   To exit the ECS Science Data Server Operator GUI, select menu path **File/Exit**.

Table 16.7-3. View Science Data Server Data Type Information - Quick-Steps

Step	What to Enter or Select	Action to take
1	**ECS Science Data Server Operator GUI** icon	**Single Click**
2	Move cursor up and down	**Single Click**
3	**File/Exit**	**Single Click and drag**

16.7.3 Add Science Data Server Data Types

In order to add an Earth Science Data Type to the ECS system, the following subsystem servers must be up and running: Data Dictionary, Subscription, Advertising, as well as the Science Data Server itself. By selecting the **Add…** button at the bottom of the window, a Add Data Type Dialog box opens, which is used to add a new ESDT to the existing installed list of data types based upon input information. To add a data type the DIT must be provided with the following information: **Descriptor Filename** - (filename/path are selected using the File… button), **Archive ID**, **Backup ID**, and **Offsite ID**.

The following procedure assumes that all applicable servers are up and running. If you are already familiar with the procedure, you may prefer to use the quick-step table at the end of the procedure. If you are new to the system, you should use the following detailed procedures:

1   Click on the **ECS Science Data Server Operator GUI** icon. This assumes that the Science Data Server Operator GUI is running, if the GUI is not up, then follow the steps for bringing up the Science Data Server Operator GUI outlined in section 16.7.1.

- The **ECS Science Data Server Operator** tool is opened.
- The **Science Data Server - Data Types** screen is displayed.

2   Click on the **ADD** button at the bottom of the window.

- The **Add Data Type** dialog box is displayed.

3   Click on the File.. button to locate the filename and path of the descriptor file to be used.

- A list of descriptor files are displayed to choose from.

4   Enter the **Archive ID**, then press return.

5   Enter the **Backup ID**, then press return.

6   Enter the **Offsite ID**, then press return.

7   Click on the **OK** button.

- The display box and criteria fields are cleared.

8   Click on the **Data Types** tab to verify that the data type was added.

- The **Science Data Server - Data Types** screen is displayed.
- The **Data Types** screen displays the following information; ESDT ShortName, Version ID, Descriptor filenames/path, DDL filename/path, and the desired Archive ID.
- Several things should happen in succession for an ESDT to be successfully added. First the data dictionary is accessed, an event is generated on the subscription server, the advertising server is accessed, and finally a message will appear on the GUI stating **Data type added successfully**.

9   To verify the data type was successfully added, you will have to access the Inventory database that the requested data type can be found in the data base. You must first exit the **ECS Science Data Server Operator** tool by selecting the menu path **File / Exit**.

10   Change directory by typing the following command:
cd /usr/ecs/{MODE}/CUSTOM/utilities

11   Setup the environment using the following command: **setenv MODE {MODE}**

12   Type: **source EcCoEnvCs**

13   Enter the Inventory database by typing:
isql -Sg0acg01_sqs222_srvr -UEcDsScienceDataServer -PnklQWabc

1. **select ***
2. **from DsMdCollections**
3. **where ShortName="M0D00" "AST_08"** for example.
4. **go**

1. **select ShortName, lastUpdate**
2. **from DsMdGranules**
3. **go**

1.   sp_help DsMdGranule

14   The configuration file **EcDsScienceDataServer.CFG** has variable **DSSDESCDIR, DSSDLLDIR**, and **DSSEVTDIR** indicating the appropriate directories. *For other verification you may view the Debug and A.LOGs for* **DDICT** (collection level information), **IOS** (Advertisements), **SbEventSERVER** (Event information was added). To view the configuration file you must first change directory by using the following command:
cd cfg /usr/ecs/{MODE}/CUSTOM/cfg

15   List directory contents by using the following command:
ll (or) ls

16   To view the configuration file type:
cat (Configuration File Name). Example **cat EcDsScienceDataServer.CFG**
- The configuration file contains the following information:
  Groups (Keywords that define an ESDT's metadata, advertised services, subscribable events, data dictionary information, validation criteria and science parameters)
  Objects (ShortName)
  Data Location = "MFC"

Table 16.7-4. Add Science Data Server Data Types - Quick-Steps

Step	What to Enter or Select	Action to Take
1	**ECS Science Data Server Operator** icon	**Single Click**
2	**ADD**	**Single Click**
3	**File ..**	**Single Click**
4	**Archive ID**	**Press Return**
5	**Backup ID**	**Press Return**
6	**Offsite ID**	**Press Return**

7	**OK** button	**Single Click**
8	**Data Type** tab	**Single Click**
9	**File/Exit**	**Single Click and drag**
10	**cd /usr/ecs/{MODE}/CUSTOM/utilities**	**press Return**
11	**setenv MODE {MODE}**	**press Return**
12	**source EcCoEnvCsh**	**press Return**
13	**lsql - Sg0acg01_sqs222_srvr – UecDsScienceDataServer -PnkIQWabc -**	**press Return**
	1. select *	**press Return**
	2. from DsMdCollection	**press Return**
	3. where ShortName="M0D00" (example only)	**press Return**
	4. go	**press Return**
	1. select ShortName, lastUpdate	**press Return**
	2. from DsMdGranule	**press Return**
	3. go	**press Return**
	1. sp_help DsMdGranule	**press Return**
14	**cd cfg**	**press Return**
15	**ll**	**press Return**
16	**cat (Configuration File Name)**	**press Return**

16.7.4 View Science Data Server Descriptor Information

The DIT can view the Science Data Server descriptor file information. The following procedure will display descriptor information for a specific data type. If you are already familiar with the procedures, you may prefer to use the quick-step tables at the end of this procedure. If you are new to the system, or have not performed this task recently, you should use the detailed procedures that follow.

1 Click on the ECS Science Data Server Operator GUI icon. This assumes that the Science Data Server Operator GUI is running, if the GUI is not up, then follow the steps for bringing up the Science Data Server Operator GUI outlined in Section 16.7.1.
  - The **ECS Science Data Server Operator** tool is opened.
  - The **Science Data Server – Data Types** screen is displayed.

2 Click on the **View** button.
  - The **Descriptor Information** screen is displayed.
  - View descriptor information, which consists of groups, objects, and keywords that define an ESDT.

3 Click on the **Close** button to return to the Data Type screen.

- The **Science Data Server – Data Types** screen is displayed.

4   To exit the **ECS Science Data Server Operator GUI**, select menu path **File/Exit**.

Table 16.7-5. View Science Data Server Descriptor Information -
Quick-Steps

Step	What to Enter or Select	Action to take
1	**ECS Science Data Server Operator GUI** icon	**Single Click**
2	**View**	**Single Click**
3	**Close**	**Single Click**
4	**File/Exit**	**Single Click and drag**

16.7.5 Monitor Science Data Server Request Processing

The **Science Data Server Operator GUI System Management Requests** screen provides the DIT with the capability to monitor and change priority on a request that is being processed by the Science Data Server subsystem.

If you are already familiar with the procedure, you may prefer to use the quick-step table at the end of the procedure. If you are new to the system, you should use the following detailed procedures:

1   Click on the **ECS Science Data Server Operator GUI** icon. This assumes that the Science Data Server Operator GUI is running, if the GUI is not up, then follow the steps for bringing up the Science Data Server Operator GUI outlined in Section 16.7.1.
- The **ECS Science Data Server Operator** tool is opened.
- The **Science Data Server – Data Types** screen is displayed.

2   Click on the **System Requests** tab.
- The **System Management Request** screen is displayed.
- The Request ID, Requestor, Component, Service Request, Status, and Priority are displayed.

3   To change the priority of a specific request, select the desired request from the request list displayed in the **System Management Requests** window whose priority must be changed.
- The request is highlighted.

4   Press the **Apply Priority** push button.
- The action is successful if no error dialog appears.
- The desired request's priority changes to "High."

- A check mark will appear in the left hand column to show which request item was changed.

5   Press the **Refresh** push button.
- The system management request list is updated with the most recent request list.

6   Verify that the desired request's priority has changed to **"High."**

7   Click the **Filter…** button to view specific system management requests.
- The **System Management Filter Requests** dialog box is displayed.
- The **System Management Filter Requests** dialog box makes it possible to select specific system requests by request ID, requester, all requests, state, or priority to be displayed in the **System Management Requests** window.

8   Click the **Request ID, Requester, or All Requests** radio button, followed by the **Apply** and **OK** buttons to view desired requests.
- The **System Management Requests** window will reappear with only the requests in the system for the desired requests.

9   Click the **Filter…** button again to view specific requests by state.
- The **System Management Filter Requests** dialog box is displayed.

10   Click the **Queued, Active, or Complete** radio button under State, followed by the **All, Apply,** and **OK** button to view desired requests.
- The **System Management Requests** window will reappears with the desired requests for the state chosen.

11   Click the **Filter…** button again to view specific requests by priority.
- The **System Management Filter Requests** dialog box is displayed.

12   Click the **High, Normal, or Low** radio button under Priority, followed by the **All, Apply,** and **OK** button to view desired requests.
- The **System Management Requests** window will reappears with the desired requests for the state chosen.

13   When you are finished monitoring system management requests, select the **Exit** option from the **File** pull down menu to exit the GUI.

Table 16.7-6. Monitor Science Data Server Request Processing - Quick-Steps

Step	What to Enter or Select	Action to take
1	**ECS Science Data Server Operator** icon	**Single Click**

2	**System Requests** tab	**Single Click**
3	Highlight request to change priority	**Single Click**
4	**Apply** push button	**Single Click**
5	**Refresh** push button	**Single Click**
6	Verify change	**Inspect**
7	**Filter…** button	**Single Click**
8	**Request ID, Requestor, or All Requests** radio button	**Single Click**
9	**Apply** button	**Single Click**
10	**OK** button	**Single Click**
11	**Filter…** button	**Single Click**
12	**Queued, Active, or Complete** radio button	**Single Click**
13	**All** button	**Single Click**
14	**Apply** button	**Single Click**
15	**OK** button	**Single Click**
16	**High, Normal, or Low** radio button	**Single Click**
17	**All** button	**Single Click**
18	**Apply** button	**Single Click**
19	**OK** button	**Single Click**
20	**File/Exit**	**Single Click and drag**

16.7.6 Change Science Data Server Polling Rate

The science data server polling rate specifies how often (in seconds) the system updates the information displayed in the **System Management Requests** window. The **Science Data Server Operator GUI Options** menu provides the Data Distribution Technician with a means of switching the **Science Data Server** database polling function on or off. The technician can modify the SdSrv Polling Rate.

The procedure that follows explains how to change the Science Data Server Operator GUI polling rate. If you are already familiar with the procedure, you may prefer to use the quick-step table at the end of the procedure. If you are new to the system, you should use the following detailed procedures:

1   Click on the **ECS Science Data Server Operator** icon. This assumes that the Science Data Server Operator GUI is running, if the GUI is not up, then follow the steps for bringing up the Science Data Server Operator GUI outlined in Section 16.7.1.
  • The **ECS Science Data Server Operator** tool is opened.
  • The **Science Data Server Data Types** screen is displayed.

2   Select **Options** → **Refresh Options** from the pull-down menu.
  • The **Refresh Options** dialog box is displayed.

3   Click on the **SdSrv Polling On** button, to change the SrSrv Polling rate (from off to on or vice versa),

- If the button does not have a check mark in it, clicking on it turns SdSrv Polling on.
- If the button already has a check mark in it, clicking on it turns SdSrv Polling off.

4   Enter the desired value (in seconds) in the **SdSrv Polling Rate** field, to change the polling rate.

5   Click on the **OK** button to apply the selections and dismiss the **Refresh Options** dialog box.

Table 16.7-7. Change Science Data Server Polling Rate - Quick-Steps

Step	What to Enter or Select	Action to Take
1	**ECS Science Data Server Operator** icon	**Single Click**
2	Options -> Refresh Options	**Single Click**
3	SdSrv Polling On	**Single Click**
4	SdSrv Polling Rate value in seconds	**press Return**
5	**OK**	**Single Click**

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